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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,495	01/28/2002	Richard King	265280-68002	2189

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BARNES & THORNBURG  
11 SOUTH MERIDIAN  
INDIANAPOLIS, IN 46204

EXAMINER

RAMANA, ANURADHA

ART UNIT PAPER NUMBER

3732

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/058,495

Applicant(s)

KING ET AL.

Examiner

Anu Ramana

Art Unit

3732

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 49-52,55-61 and 124 is/are pending in the application.
- 4a) Of the above claim(s) 53,54,62 and 63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 49-52,55-61 and 124 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/6/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 4, 2005 has been entered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 49-52, 55-61 and 124 are rejected under 35 U.S.C. 102(b) as being anticipated by McKellop et al. (US 6,165,220).

Regarding claims 49-52 and 55, McKellop et al. disclose an implantable bearing or acetabular cup with a crosslinked ultra high molecular weight polyethylene (UHMWPE) surface or "first" layer functioning as the bearing or articulating surface and an underlying or "second" non-crosslinked layer which has an engaging surface for attachment to the acetabulum of a patient wherein the two layers are compression molded (Figure 2, col. 2, lines 19-22, col. 3, lines 14-19, col. 9, lines 34-67 and col. 10, lines 1-19).

Regarding claims 56-61 and 124, McKellop et al. further disclose another embodiment wherein the crosslinking gradually diminishes below the surface layer, i.e., the surface layer has a degree of crosslinking while the underlying layer has a different degree of crosslinking (col. 4, lines 56-67 and col. 5, lines 1-33).

"Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on the method of its production. If the product in the product-by-process claim is the same as or obvious from the product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 49-52, 55-61 and 124 are rejected, in the alternative, under 35 U.S.C. 103(a) as being unpatentable over McKellop et al. (US 6,165,220) in view of Scott et al. (US 6,547,828).

McKellop et al. disclose each and every structural element of Applicants' claimed invention. See previous discussion.

McKellop et al. disclose crosslinking of a polymer layer utilizing radiation such as an electron beam or a chemical agent (col. 2, lines 18-31).

McKellop et al. disclose all elements of the claimed invention except for the use of gamma rays for crosslinking.

Scott et al. teach the equivalence of gamma rays and electron beams in order to achieve polymer crosslinking (col. 6, lines 49-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have performed crosslinking utilizing gamma radiation wherein so doing would amount to mere substitution of one functionally equivalent cross linking agent for another within the same art and the selection of any of these types of

crosslinking agents would work equally well for the purpose of cross linking the wear surface in the McKellop implant.

Claims 49-52, 55-61 and 124 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devanathan et al. (US 5,645,594 or '594 herein) in view of Li (US 6,794,423).

'594 discloses a composite polymer implant having multiple layers formed by compression molding (Fig. 2 and col. 2, lines 10-65).

'594 discloses all elements of the claimed invention except for a gamma irradiated crosslinked layer of polymer.

Li teaches gamma irradiation of a UHMWPE implant to improve its wear properties (col. 2, lines 27-37, col. 3, lines 7-14 and col. 4, lines 4-53).

Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to have irradiated the '594 implant with gamma radiation, as taught by Li, to improve its wear properties.

### ***Response to Arguments***

Applicant's arguments with respect to claims 49-52 and 55-61 submitted under "REMARKS" in the response filed on April 4, 2005 have been carefully considered.

Applicants' arguments with respect to the rejections of claims 49-52, 55-61 and 124 as being anticipated by McKellop et al. are not persuasive. The McKellop et al. bearing has the same structure as Applicants' claimed invention since it has a crosslinked layer and a noncrosslinked layer. Applicants' arguments regarding gel content, chemical composition, wear rate etc. are not directed to claimed features.

Applicants' arguments that the use of gamma radiation would destroy McKellop et al. are not persuasive. It is well known that the degree of crosslinking of a material is a function of the radiation dose it receives (see col. 1, lines 49-67 and col. 2, lines 1-3 of Krebs et al. (US 6,365,089)). Thus, if one so desires, the gamma radiation dose could be adjusted to achieve the same degree of crosslinking as e-beam radiation in the McKellop et al. implant.

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anu Ramana whose telephone number is (571) 272-4718. The examiner can normally be reached Monday through Friday between 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached at (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AR *Anu Ramana*  
June 25, 2005

*Kevin Shaver*  
KEVIN SHAVER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700